Claims

1. A method for separating and/or isolating circular nucleic acids from a mixture having different species of nucleic acids, ~~other than~~ in addition to circular nucleic acids wherein the mixture is treated under alkaline conditions at a pH > 8 with a solid matrix consisting essentially of a silica material in presence of at least one chaotropic substance.

2. The method of claim 1, wherein the circular nucleic acid is double stranded DNA, in particular a plasmid.

3. The method of claim 1 ~~and/or 2~~, wherein the mixture contains non circular nucleic acids and at least one other species of nucleic acids, such as RNA, single stranded DNA, double stranded linear DNA or circular open double stranded DNA or combinations thereof.

4. The method of ~~any one of the claims 1 to 3~~ claim 1, wherein the mixture is of biological origin, such as bacterial crude lysate.

5. The method of ~~any one of the claims 1 to 4~~ claim 1, wherein the chaotropic substance is a chaotropic salt, such as a thiocyanate, urea, guanidinium salt, perchlorate salt, a halide salt and/or the chaotropic substance is an alcohol, such as methanol, ethanol, n-propanol, isopropanol, n-butanol, n-pentanol or combinations of said chaotropic substances.

6. The method of ~~any one of the claims 1 to 5~~ claim 1, wherein the silica material is a silica or glassfiber membrane, glass or silica in particulate form such as powder, beads or frits and/or silica-gel membranes comprising stacks of several membrane layers (multi layer membranes).

7. The method of ~~any one of the claims 1 to 6,~~ wherein the silica material is magnetic attractable beads with a silicaceous surface such as silica or glassfiber surface.

8. The method of ~~any one of the claims 1 to 7~~, wherein the alkaline conditions are adjusted by adding an aqueous solution of an amphoteric substance such as an omega amino acid to adjust in particular a pH of 8 to 12 in the resulting mixture.

9. The method of ~~any one of the claims 1 to 8,~~ performed in multi well plates such as 384 or 96 wells.

10. The method of ~~any one of the claims 1 to 9,~~ performed in an automated manner.

11. The method of ~~any one of the claims 1 to 10~~, wherein the following process steps are performed:

- cell lysis
- adjustment of appropriate conditions for selective binding of plasmid DNA preventing binding of linear DNA to silica material
- selective adsorption of plasmid DNA to a silica surface
- washing of the silica material
- elution of the plasmid DNA from the silica material.

12. An aqueous buffer comprising 6 to 9 M sodium thiocyanate, 0 to 20 Vol.-% C_1 - C_4 alcohols such as ethanol or isopropanol, 25 to 130 mM buffer substance preferably ω-amino acids.

13. A kit comprising the aqueous buffer of claim 12 and auxiliary materials "such as" columns with "our" ~~without silicaceous~~ material, suspensions of silicaceous material, additional buffers "such as" resuspension buffers, ~~lysis buffers,~~ washing buffers, elution buffers, instruction manual.

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